

WHAT IS CLAIMED IS:

1. A supporting mechanism for a rod integrator, comprising:  
a holding unit that holds a rod integrator; and  
a supporting member that presses the holding unit against the rod  
5 integrator to support the rod integrator, wherein  
the holding unit comprises  
a contact surface which contacts with side surface of the rod  
integrator except in  
a vicinity of edges of the side surface and  
10 a vicinity of a light entrance plane and a light  
projection plane of the rod integrator.
2. A supporting mechanism according to Claim 1, wherein  
the holding unit includes a single holding member which contacts  
15 with two side surfaces of the rod integrator that are adjacent to one another.
3. A supporting mechanism according to Claim 1, wherein  
in at least one of the side surfaces of the rod integrator, the holding  
unit contacts the side surface of the rod integrator except areas having  
20 predetermined widths from the edges of the side surface.
4. A supporting mechanism according to Claim 1, wherein  
the holding unit has a shape such that the holding unit does not  
contact with an area on the side surface of the rod integrator that has a  
25 predetermined width from at least a selected one of the light entrance plane  
and the light projection plane of the rod integrator.
5. A supporting mechanism according to Claim 1, wherein  
a cross-sectional shape of the rod integrator is a quadrilateral,  
30 the holding unit comprises a pair of holding members each of which

supports two side surfaces of the rod integrator adjacent to one another, and  
the supporting member presses the holding unit in the direction of a  
diagonal of the light entrance plane of the rod integrator.

- 5 6. A projector for projecting an image, comprising:  
a light source;  
a rod integrator through which a light from the light source passes;  
the supporting mechanism according to Claim 1;  
an optical modulation unit that  
10 modulates the light received from the rod integrator  
according to image signals and  
projects the light as image light which shows an image; and  
a projecting optical system that projects the image light received  
from the optical modulation unit.

- 15 7. A supporting mechanism for a rod integrator, comprising:  
a first holding member that holds a rod integrator;  
a first supporting member that presses the first holding member  
against the rod integrator to support the rod integrator, wherein  
20 the first holding member comprises:  
a first contact portion which contacts with a first side surface  
of the rod integrator; and  
a first facing portion which is spaced from a first side edge of  
the first side surface.

- 25 8. A supporting mechanism according to Claim 7, wherein  
the first holding member further comprises:  
a second contact portion which contacts with a second side  
surface of the rod integrator, the second side surface being adjacent to the  
30 first side surface and sharing the first side edge with the first side surface.

9. A supporting mechanism according to Claim 8, wherein  
a cross-sectional shape of the rod integrator is a quadrilateral,  
the supporting mechanism further comprising:

5 a second holding member that holds the rod integrator;

a second supporting member that presses the second holding  
member against the rod integrator to support the rod integrator, wherein  
the second holding member comprises:

10 a third contact portion which contacts with a third side  
surface of the rod integrator;

a second facing portion which is spaced from a second side  
edge of the third side surface; and

15 a fourth contact portion which contacts with a fourth side  
surface of the rod integrator, the fourth side surface being adjacent to the  
third side surface and sharing the second side edge with the third side  
surface, wherein

the first and second supporting members press the rod integrator  
along a direction of a diagonal of a quadrilateral cross section of the rod  
integrator in opposite directions to one another.

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10. A supporting mechanism according to Claim 7, wherein  
the first holding member covers the first side surface except areas  
having predetermined widths from edges of the first side surface.

25 11. A supporting mechanism according to Claim 7, wherein  
when the first side surface is divided in a direction of a light axis of  
the rod integrator into:

an entrance part which is adjacent to a light entrance plane  
of the rod integrator;

30 a projection part which is adjacent to a light projection plane

of the rod integrator, and

a middle part between the entrance part and the projection part,

the first contact portion contacts only the middle part.

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12. A projector for projecting an image, comprising:

a light source;

a rod integrator through which a light from the light source passes;

the supporting mechanism according to Claim 7;

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an optical modulation unit that

modulates the light received from the rod integrator into image light which shows an image according to image signals, and

projects the image light; and

a projecting optical system that projects the image light received

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from the optical modulation unit.